

# PATENT ABSTRACTS OF JAPAN

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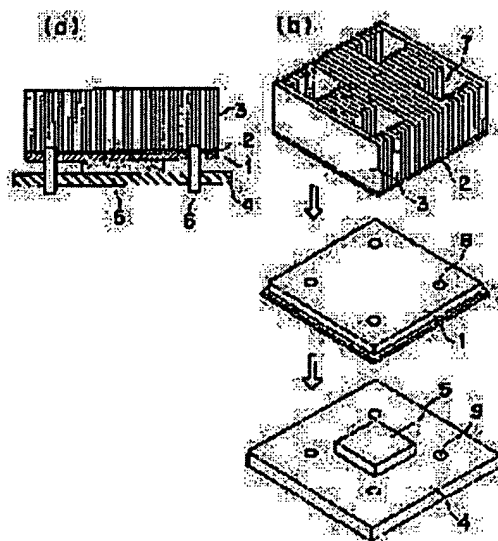
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## (54) HEAT SINK FOR ELECTRICAL HEATING ELEMENT GENERATING HEAT IN HIGH DENSITY

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To efficiently cool the semiconductor element of miniaturized electric equipment by integrally fixing a vapor chamber and a high-strength heat radiation member for improving the strength to an electrical heating element.

**SOLUTION:** A plate-type heat pipe 1 for composing a vapor chamber is made of a container with a cavity that is sealed, for example, by upper and lower plate materials made of copper, a hole 8 for such fixing member as a screw is formed also at a container, and for example, water is sealed into the sealed cavity member of the container as working fluid. A plate-type heat pipe 1 and a heat sink are overlapped onto electrical heating part placement member 4 where electrical heating parts 5 are placed and are fixed integrally by such fixing member as a screw through the holes 7, 8 and 9, thus strongly pressing the plate-type heat pipe 1 to the electrical heating parts 5 without any deformation by a base with the sufficient bending strength of the heat sink and obtaining high heat performance.



### LEGAL STATUS

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